

Jeep & Blazer, L.L.C.
environmental law

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VIA OVERNIGHT MAIL AND ELECTRONIC MAIL

September 25, 2015

Ms. Susan Hedman
Region 5 Administrator
United States Environmental Protection Agency
77 West Jackson Boulevard (R-19)
Chicago, IL 60604-3507
Email: hedman.susan@epa.gov

Re: Dodge Avenue Water Line, City of Evanston, Illinois

Dear Ms. Hedman:

The City of Evanston is notifying USEPA that benzo(a)pyrene, and other contaminants associated with coal tar, have been identified in crustaceous material on the outside and inside a water distribution line that runs along Dodge Avenue within the City ("Dodge Avenue Water Line"). The contaminants detected in the crustaceous material have not been detected in samples of water taken from the City's water distribution system at or above the IEPA-required reporting limits. The crustaceous material is not the remnant of coal tar used to construct the Dodge Avenue Water Line. See 40 CFR 141.42(d) As to the source of the crustaceous material, all available information points to infrastructure associated with the Skokie Manufactured Gas Plant Site ("Skokie MGP"), specifically an unidentified 24" pipeline ("Unidentified 24" Pipe") that runs along Dodge Avenue and has been encountered at locations approximately five feet above the Dodge Avenue Water Line. The same type of crustaceous material observed on and within the Dodge Avenue Water Line has been observed on the outside of the Unidentified 24" Pipe. Chemical analysis of the crustaceous material on the Unidentified 24" Pipe discloses that the material has the same chemical finger-print as the crustaceous material on and inside of the

Dodge Avenue Water Line and of coal tar.

For additional information on the Skokie MGP see <http://www.skokiesite.com/default.aspx>. Nicor and ComEd are responsible for the cleanup of the Skokie MGP and infrastructure associated with distribution of the gas produced by the MGP.

By way of background information, we enclose as **Exhibit A** a report entitled, "Opinion on the Source of the Occurrence of Petroleum and Gas in Monitor Wells and Borings in the James Park Area," prepared for the City by SCS Engineers in January 2015 ("SCS Report"). We direct your attention in particular to Reference No. 6 in the SCS Report, a September 12, 2014 Memorandum explaining that the City's Water Department frequently encounters the Unidentified 24" Pipe when repairing the Dodge Avenue Water Line. Attachment 1 to Memorandum identifies the location where the Unidentified 24" Pipe was encountered by the Water Department in 2004. The Memorandum also explains that crustaceous material was observed during work to repair of the Dodge Avenue Water Line in 2014 ("2014 Work"). Chemical analysis of the crustaceous material on the Unidentified 24" Pipe discloses that the material has the same chemical finger-print as the crustaceous material discovered in 2015 on and inside of the Dodge Avenue Water Line, and as coal tar.

This summer the City undertook the Dodge Avenue 2015 Water Main Replacement and Street Resurfacing Project ("2015 Work"). The Unidentified 24" Pipe was encountered during the 2015 Work. As part of the 2015 Work, samples were collected of the crustaceous material on the Unidentified 24" Pipe, the crustaceous material on and inside the Dodge Avenue Water Line, and soil. Chemical analysis of the crustaceous material on and inside the Dodge Avenue Water Line discloses that the material has the same chemical finger-print as the crustaceous material on the Unidentified 24" Pipe, and as coal tar.

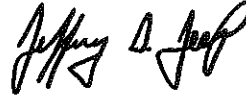
Please refer to **Exhibit B** for a more detailed discussion of the 2014 and 2015 Work.

In the absence of additional information to the contrary, the only reasonable conclusion is that condensate from manufactured gas has leaked from the infrastructure associated with the Skokie MGP, specifically the Unidentified 24" Pipe that runs down Dodge Avenue, and penetrated the Dodge Avenue Water Line. Fortunately, recent testing did not detect benzo(a)pyrene, or other constituents of coal tar, in the City's drinking water at or above the IEPA-required reporting limits. Clearly, however, it is totally unacceptable for benzo(a)pyrene to be present in crustaceous material inside the Dodge Avenue Water Line at a concentration of 780 mg/L, well above the Maximum Contaminant Level in drinking water (0.0002 mg/L). Your

Letter to Ms. Susan Hedman
Jeep & Blazer, L.L.C.
Page 3 of 4

agency has the authority under the SDWA to require ComEd and Nicor to immediately address this problem. We look forward to meeting with you in the near future to discuss this situation in more detail.

Very truly yours,

A handwritten signature in black ink, appearing to read "Jeffery D. Jeep". The signature is stylized with a large, looped "J" and a cursive "D".

Jeffery D. Jeep

cc: T. Poy, Branch Chief, USEPA Region 5, Ground Water & Drinking Water via email
M. Willhite, Chief, Bureau of Water, IEPA via email
C. Grigalauski, Regional Manager, Des Plaines Office, IEPA via email
G. Farrar, City Attorney, City of Evanston via email
M. Masoncup, Deputy City Attorney, City of Evanston via email

JDJ/me

EXHIBIT A
Refer to Dropbox Link to Download
SCS Report

EXHIBIT B – SUMMARY OF 2014 AND 2014 WORK

WORK	DESCRIPTION	No.
2014	For discussion of the crustaceous material observed on the Dodge Avenue Water Line, refer to the SCS Report (Exhibit A), Section 4.1.2, "Crust Sample From Water Pipe Excavation at Dodge and Mulford"	A-1
2014	For a photograph of crustaceous material on the Dodge Avenue Water Line, refer to the SCS Report, Figure 5	A-2
2014	For analytical testing of the crustaceous material on the Dodge Avenue Water Line, refer to the SCS Report (p. 323 of Acrobat file)	A-3
2014	For a comparison of the chemical finger-print of the crustaceous material on the Dodge Avenue Water Line with that of the Skokie MGP and coal tar, refer to the SCS Report, Table 2	A-4
2015	Figure identifying location of samples and photographs taken during the 2015 Work (Overview)	B-1A
2015	Figure identifying location of samples and photographs taken during the 2015 Work (Detailed View)	B-1B
2015	Photographs of the Unidentified 24" Pipe encountered during the 2015 Work	B-2
2015	Photographs of crustaceous material on the outside of the Dodge Avenue Water Line	B-3
2015	Photographs of crustaceous material on the inside of the Dodge Avenue Water Line	B-4
2015	Summary of Laboratory Analysis of samples of exterior crustaceous material and soil – Unidentified 24" Pipe (keyed to sample locations in Attachment B-1)(above)	B-5A
2015	Summary of Laboratory Analysis of samples of exterior crustaceous material and soil – Dodge Avenue Water Line (keyed to sample locations in Attachment 1)(above)	B-5B
2015	Summary of Laboratory Analysis of samples of internal crustaceous material and soil – Dodge Avenue Water Line (keyed to sample locations in Attachment B-1)(above)	B-5C
2015	Table 2 of SCS Report (above), revised to reflect 2015 Work	B-6
2015	Figure identifying locations where samples were collected from the City's water distribution system	B-7
2015	Analytical testing of samples collected from the City's water distribution system	B-8

ATTACHMENT A-1

surface (bgs). Continuous soil samples were attempted using this method. Soil samples recovered were field classified, jar samples of each 4-foot push were taken, and the remaining sample was photographed, wrapped in plastic film and stored in boxes. Flameionization detector (FID) and photoionization (PID) measurements were made of each core sample obtained. Logs of the geoprobes are shown in **Appendix A-2**. The FID meter was a Photovac, MicroFID-IS with a maximum reading of 50,000 ppm. The PID meter was a Rae Systems, MiniRAE Lite, with a 10.6 eV gas discharge lamp with a maximum reading of 5,000 ppm.

Borings - Borings were drilled at three corners of the James Park Property using hollow stem auger drilling methods. Prior to the SCS investigation, CSG drilled a boring at the southwest corner of the property. At each location, soil samples were taken at 5-foot intervals using Standard Penetration Test (SPT) methods. These samples were field classified, jarred, and sent to the geotechnical laboratory. Index property tests were performed on selected representative samples. FID and PID measurements were made on each SPT sample. Upon reaching bedrock at about 67 to 75 ft. depth in these borings, the borings were advanced 10-ft into the bedrock using rock coring methods. SCS visually classified the rock core and sent representative rock samples to ZymaX Forensics for GC-MS and GC-FID fingerprint testing (one rock sample from each rock core).

Logs of all of the auger borings are shown in **Appendix A-3**.

Gas Monitor Wells - Gas monitor wells (GMP's) were installed in all of the borings and geoprobes around the perimeter of James Park. The gas monitor wells consisted of a 10-foot-long, 1-inch-diameter slotted PVC pipe section installed at specific depths in each of the borings to capture any gas phase occurring in a specific geologic unit at the location.

Generally, GMPs were installed in the borings in the contact area between the soft and hard glacial till units and in the upper bedrock unit at each location. GMPs were installed in the geoprobes only in the contact area between the soft and hard glacial till units. An exception to this general rule occurred at location 19 in the parking lot of Dawe's School. At this location an additional GMP (GMP-19S) was installed in the center of the soft glacial till unit to determine whether a gas phase existed at that level.

Gas concentration and pressure measurements were made on quick connections installed on each of the GMPs using a GEM 5000 landfill gas meter. These measurements were also made on GMPs installed during CSG investigations. It was not possible to make gas concentration and pressure measurements on some of the wells because the GMP installed did not encounter a gas phase and the GMP was flooded with water. The field gas concentrations, water levels, screened zones and pressure measurements are shown in **Appendix A-1, Summary Table 1**.

The logs of the GMP's are shown in **Appendices A-2 and A-3**.

4.1.2 Crust Sample From Water Pipe Excavation at Dodge Street and Mulford

The City of Evanston Department of Public Works (EDPW) was repairing a water main at the time the borings and probes were being drilled. SCS observed that the work was being done and

discussed the activities with Mr. Tim Bartus, Director of Public Works. A photograph of the work is shown on **Figure 4**.

Several pieces of dark brown to black crust were extracted from a water pipe at the corner of Dodge Street and Mulford Avenue during the investigation. The water line was at a depth of about 12 feet bgs at the point the repair was occurring. This depth was about 5 to 8 feet below the invert of other electrical and gas utility lines in the area and was estimated to be 5 or more feet above the crown of sanitary and storm sewers in the area.

Mr. Bartus indicated that the water line along Dodge Street is encrusted with a relatively thick layer of dark brown to black material that has to be removed to allow for repair of the water line. This crust material is shown in the photograph on **Figure 5**. The thickness of the crust material on the pipe is typically varies from about 2 to 4 inches along Dodge Street. SCS took a sample of the crust material for analytical testing (see laboratory reports in **Appendices B-2 and B-3**).

4.1.3 Water Sample From GMP-19S

The GMP installed in GMP-19S did not encounter a gas phase. The GMP was found to be filled to a depth of about 15 feet bgs with water. During an attempt to remove the water from GMP-19S to stimulate a gas phase if one were present, a dark brown to black liquid phase was observed in the liquid being removed. The liquid is shown on the water's surface in the photograph on **Figure 6**. The liquid in GMP-19S was sampled twice, and the samples were sent to laboratories for analytical testing using qualitative GC-MS and GC-FID fingerprinting methods and quantitative SVOC and VOC analyses.

4.1.4 Locations of Natural Gas Pipelines In the James Park Area

Based on our review of public information, SCS did identify that there are substantial natural gas pipeline infrastructure elements in the general vicinity of James Park area. These include a major terminal for Kinder Morgan, major trunk lines for Nicor and Peoples Gas Company that tap their supply from the Kinder Morgan terminal. The location of the Kinder Morgan terminal is shown on **Figure 1**.

Based on information SCS received from Mr. Greg Stiglic of Nicor on May 21, 2014, SCS was able to identify the general locations of existing natural gas pipelines in the area of James Park. **Figure 7** shows the locations of existing gas pipelines in the specific area of James Park. This information was provided in the e-mail referenced above. These pipelines are located on the North, East and south sides of James Park. The existing pipelines were installed from 1929 to 1971. We understand that the operational pressures in the pipelines shown range from 0.25 pounds per square inch (psi) to 60 psi.

In November 2014, Nicor excavated and decommissioned a portion of their existing system in the area immediately north of James Park. We understand from correspondence from Nicor that this work was done to remove a portion of the system containing cast iron pipe because this portion was known to be prone to leakage (**Reference 4**). SCS observed excavations made on Dodge Street just north of Oakton Street and on Asbury Street just South of Oakton Street. The photographs on **Figure 8** shows the pipe exposed in these excavations and the visual condition of

ATTACHMENT A-2



Figure 5. Photograph of Crust Sample Taken From the Water Pipeline

The pipe encrustation was approximately 2.5 inches thick, as shown in this photo. Upper, smooth surface (under thumb) was in contact with the water pipe.

JAMES PARK
EVANSTON, ILLINOIS
SCS ENGINEERS PROJECT #25214107.00

SCS ENGINEERS

2830 DAIRY DRIVE, MADISON, WI 53718-6751
PHONE: (608) 224-2830

ATTACHMENT A-3

Detection Summary

Client: SCS Engineers
Project/Site: James Park - 25214107

TestAmerica Job ID: 500-82702-1

Client Sample ID: Special-1 (pipe crust)

Lab Sample ID: 500-82702-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Benzene	210		17	5.2	ug/Kg	50	*		8260B	Total/NA
Ethylbenzene	250		17	8.8	ug/Kg	50	*		8260B	Total/NA
Isopropylbenzene	50	J	140	17	ug/Kg	50	*		8260B	Total/NA
Naphthalene	110	J	140	34	ug/Kg	50	*		8260B	Total/NA
Toluene	17		17	8.0	ug/Kg	50	*		8260B	Total/NA
Xylenes, Total	40		35	4.8	ug/Kg	50	*		8260B	Total/NA
1-Methylnaphthalene	780		38	9.4	ug/Kg	1	*		8270D	Total/NA
2-Methylnaphthalene	140		38	7.1	ug/Kg	1	*		8270D	Total/NA
Acenaphthene	93		38	6.9	ug/Kg	1	*		8270D	Total/NA
Acenaphthylene	170		38	5.1	ug/Kg	1	*		8270D	Total/NA
Anthracene	270		38	6.4	ug/Kg	1	*		8270D	Total/NA
Benzo[a]anthracene	340		38	5.2	ug/Kg	1	*		8270D	Total/NA
Benzo[a]pyrene	240		38	7.5	ug/Kg	1	*		8270D	Total/NA
Benzo[b]fluoranthene	270		38	8.3	ug/Kg	1	*		8270D	Total/NA
Benzo[g,h,i]perylene	150		38	12	ug/Kg	1	*		8270D	Total/NA
Benzo[k]fluoranthene	120		38	11	ug/Kg	1	*		8270D	Total/NA
Carbazole	130	J	190	100	ug/Kg	1	*		8270D	Total/NA
Chrysene	390		38	11	ug/Kg	1	*		8270D	Total/NA
Dibenz(a,h)anthracene	63		38	7.5	ug/Kg	1	*		8270D	Total/NA
Dibenzofuran	62	J	190	45	ug/Kg	1	*		8270D	Total/NA
Fluoranthene	580		38	7.2	ug/Kg	1	*		8270D	Total/NA
Fluorene	390		38	5.4	ug/Kg	1	*		8270D	Total/NA
Indeno[1,2,3-cd]pyrene	120		38	10	ug/Kg	1	*		8270D	Total/NA
Naphthalene	310		38	5.9	ug/Kg	1	*		8270D	Total/NA
Phenanthrene	550		38	5.4	ug/Kg	1	*		8270D	Total/NA
Pyrene	1400		38	7.7	ug/Kg	1	*		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Chicago

ATTACHMENT A-4

**Table 2: Comparison of Black Crust SVOCs with a List of Coal Tar Compounds Typically Found at MGP Sites by the NYSDEC and USEPA and With Compounds Actually Found at the Skokie MGP Site Near James Park
James Park, Evanston, Illinois / SCS Engineers Project #25214107.00**

Compound	NYSDEC²	USEPA³	Skokie MGP⁴	Black Crust
1-Methylnaphthalene			Not Tested	Yes
2-Methylnaphthalene	Yes	Yes	Not Tested	Yes
Acenaphthene	Yes	Yes	Yes	Yes
Acenaphthylene	Yes	Yes	Yes	Yes
Anthracene	Yes	Yes	Yes	Yes
Benzene	Yes	Yes	Yes	Yes
benzo(a)anthracene	Yes	Yes	Yes	Yes
benzo(a)pyrene	Yes	Yes	Yes	Yes
benzo(b)fluoranthene	Yes	Yes	Yes	Yes
benzo(g,h,i)perylene	Yes	Yes	Yes	Yes
benzo(k)fluoranthene	Yes	Yes	Yes	Yes
chrysene	Yes	Yes	Yes	Yes
dibenzo(a,h)anthracene	Yes	Yes	Yes	Yes
Ethylbenzene	Yes	Yes	Yes	Yes
fluoranthene	Yes	Yes	Yes	Yes
fluorene	Yes	Yes	Yes	Yes
indeno(1,2,3-cd) pyrene	Yes	Yes	Yes	Yes
Isopropylbenzene			Not Tested	Yes

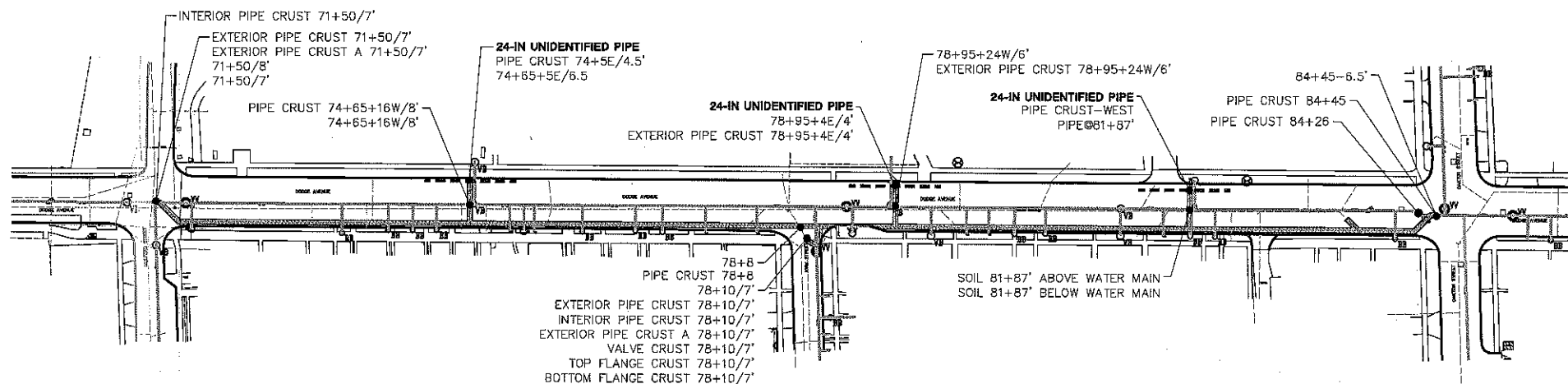
I:\25214107\Reports\Tables for Technical Report\Tables 1 Through 3.doc

² See New York State Department of Environmental Conservation Paper, "Contamination at MGP Sites," found at <http://www.dec.ny.gov/chemical/24922.html>.

³ Multi-Site Risk Assessment Framework Former Manufactured Gas Plant Sites, Prepared for Wisconsin Public Service Corporation, Peoples Gas Light and Coke Company, and North Shore Gas Company, by Exponent, dated September 5, 2007, Table 1, "MGP-related contaminants of potential concern, former MGP sites, EPA Region," found at <http://www.epa.gov/region05/cleanup/mgp.htm>.

⁴ Skokie MGP Site Investigation Report prepared by Burns & McDonnell on behalf of Nicor dated November 2008, Table 17, Source Material Evaluation, Page 115 of 129, SKO-SP170-001, sample taken at 0-0.9 ft. below ground surface.

ATTACHMENT B-1A



LEGEND

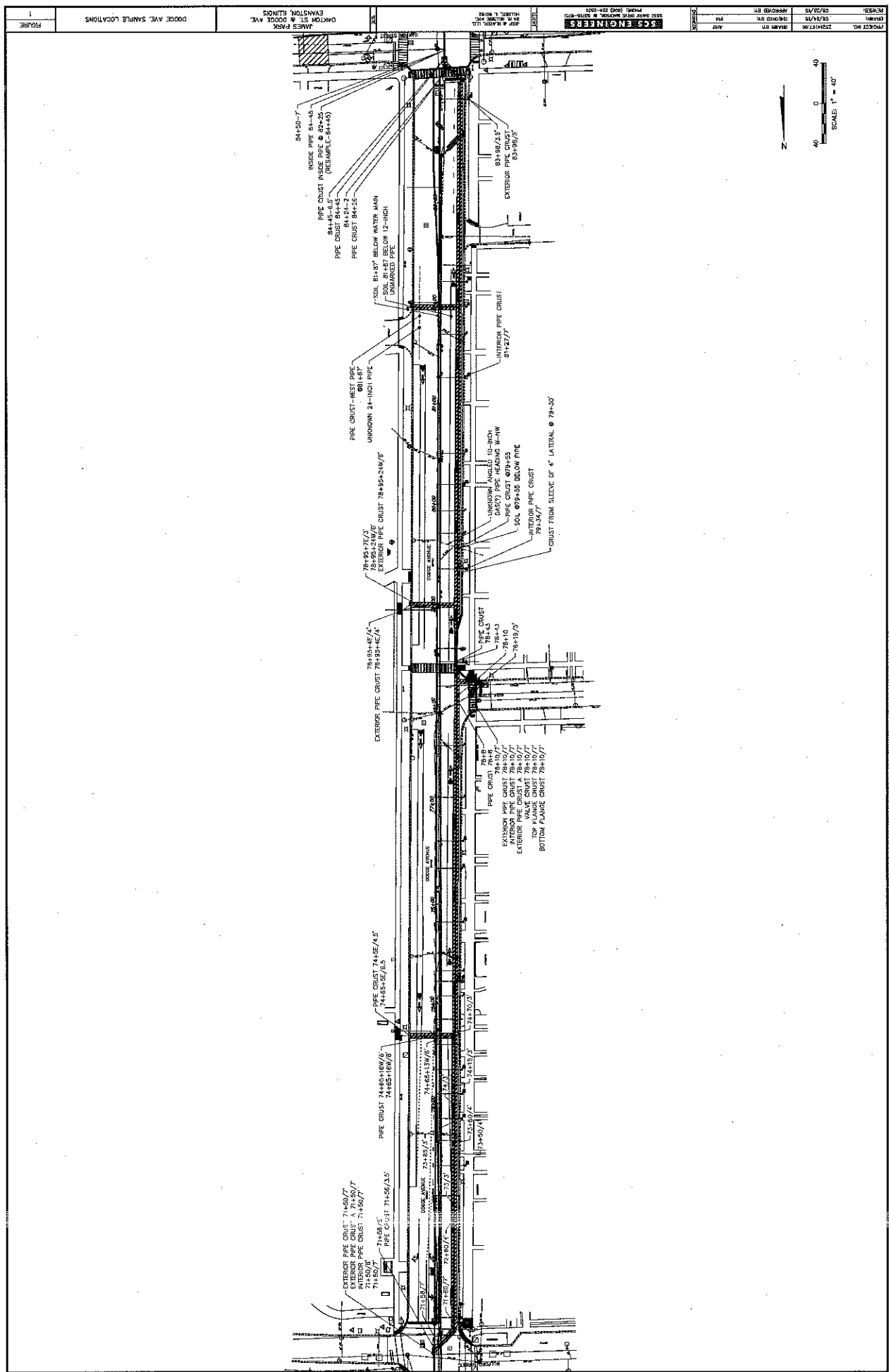
- WATER MAINS PRIOR TO REPLACEMENT PROJECT IN 2015
- - - - - APPROXIMATE LOCATION OF UNIDENTIFIED 24-IN PIPE



SCALE: 1" = 80'

PROJECT NO.	25214107.00	DRAWN BY:	AHB	ENGINEER	SCS ENGINEERS	CLIENT	JEEP & BLAZER, LLC. 24 N. HILLSIDE AVE. HILLSDALE, IL 60162	SITE	JAMES PARK OAKTON ST. & DODGE AVE. EVANSTON, ILLINOIS	DODGE AVE. SAMPLE LOCATIONS	EXHIBIT
DRAWN:	09/17/15	CHECKED BY:	PH		2830 DAIRY DRIVE MADISON, WI 53716-8751 PHONE: (608) 224-2830						B-1
REVISED:	09/22/15	APPROVED BY:									

ATTACHMENT B-1B



ATTACHMENT B-2

EXHIBIT B-2: PHOTOGRAPHS OF THE UNIDENTIFIED 24-IN PIPE ENCOUNTERED DURING 2015 WORK

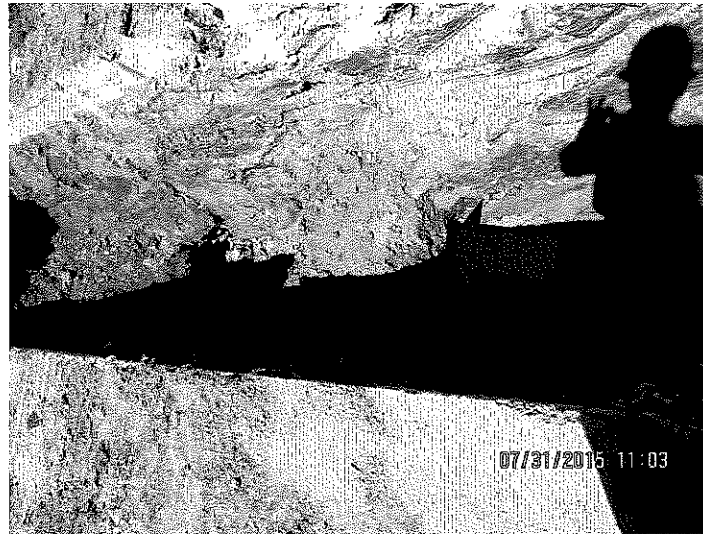


Photo 1: Sample "Pipe Crust-West Pipe @ 81+87" was collected on 7/31/15 at 14:55 from a depth of approx 4 ft. Sample was associated with an unidentified, 24-inch-diameter, N-S pipe 6 ft E of W curb of Dodge Ave. Sample consisted of pipe crust removed from the underside of the 24-in pipe (see red arrow). Brick and glass fragments were present in the backfill around the pipe. This photo shows the large, roughly 24-inch pipe located to the left of shadow. Photo facing NW. By Grover. See exhibit B-5 for laboratory analyses

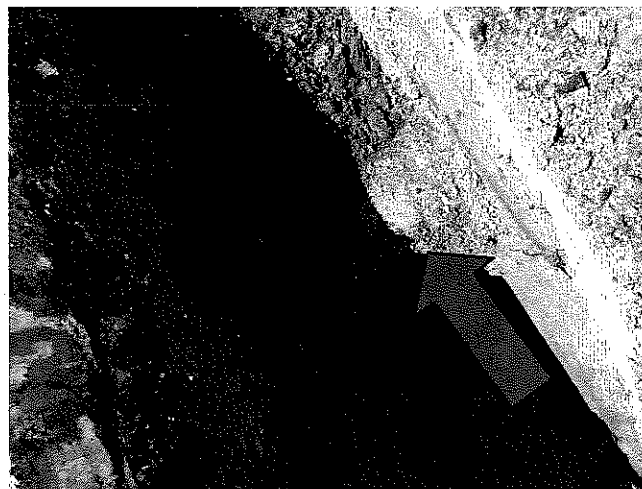


Photo 2: Sample "Pipe Crust 74+65+5E/4.5" was collected at 8/6/15 at 12:45 from a depth of 4.5 ft. This sample was associated with an unidentified, 24-inch-diameter metal pipe running N-S down the west side of Dodge Avenue. The sample consisted of pipe crust scrapped from beneath the 24-in pipe (see red arrow). This photo shows the N-S, 24-inch pipe exposed in the E-W Levy Center supply-line trench. Photo facing NW. By Kramer. See exhibit B-5 for laboratory analyses



Photo 3: Sample “Exterior pipe crust, 78+95+4E/4” was collected at 8/12/15 at 13:00 from a depth of 4 ft. Sample was associated with an unidentified, 24-inch-diameter N-S pipe 4 ft E of W side of Dodge. Sample consisted of crust collected from the west side of the 24-in pipe (see red arrow). Photo shows the 24-inch pipe, between the worker and excavator, traversing the E-W excavation for the Dawes School 2-in supply lateral. Pipe surrounded by brown sand fill. Photo facing east. By Kramer. See exhibit B-5 for laboratory analyses.

ATTACHMENT B-3

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 1: Sample 84+45-6.5' collected on 7/21/15 at 10:40 am from a depth of 6.5 ft. Sample is associated with the 10-inch N-S water main (now abandoned) running down the center of Dodge Ave. Sample taken from soil adjacent to main on the east side. This photo shows the sample area just after sampling. Photo facing to the ESE. By Kollasch. See exhibit B-5 for laboratory analyses

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 2: Sample “Pipe Crust 84+26” was collected on 7/24/15 at 8:55 am from a depth of 7 ft. Sample is associated with a 10-inch N-S water main (now abandoned) running down the center of Dodge Ave. Sample consists of black pipe crust collected from the underside of the pipe. This photo shows the approximate location of the crust sample, approximately 2 feet north of the water valve (seen in the upper right corner of the photo). Photo facing SE. By Kollasch. See exhibit B-5 for laboratory analyses

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 3: Sample “Pipe Crust 84+45” was collected on 7/24/15 at 10:50 am from a depth of 7 ft. This sample is associated with a 10-inch-diameter, N-S water main (now abandoned) running down the center of Dodge Ave. Sample consists of a pipe crust collected from the exterior of a water-main segment cut from the 10-inch N-S main. Photo shows the approximate location of the pipe segment that was removed from the deepest pipe in the excavation and sampled. Photo facing NNW. By Kollasch. See exhibit B-5 for laboratory analyses

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 4: Sample “Soil @ 81+87' Above Water Main” was collected on 7/31/15 at 8:40 am from a depth of 5.5 ft. This sample was associated with a 10-inch-diameter, N-S water main (now abandoned) running down the center of Dodge Ave. The sample consisted of soil from above water main. This photo shows the now-abandoned water main where the soils above were screened and then sampled. Photo facing west. By Grover. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 5: Sample "Soil @ 81+87' Below Water Main" was collected on 7/31/15 at 9:05 am from a depth of approx 7.0 feet. This sample was associated with a 10-inch N-S water main (now abandoned) running down the center of Dodge Ave. This sample consists of soil collected from below water main. This photo shows A-Lamp personnel digging soil from under the now-abandoned water main for sampling. Photo facing NW. By Grover. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 6: Sample, "78+8" was collected on 8/3/15 at 16:00 at a depth of 7 ft. This sample was associated with an 8-inch OD water main running east-west on Kirk St. This sample consisted of soil from below the Kirk Street water main. This photo shows the water main and the sample location. Sample collected by digging below the pipe from the north. Photo facing SW. By Kollasch. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 7: Sample “78+8 Pipe Crust” was collected on 8/3/15 at 16:05 from a depth of 6 ft. This sample was associated with at 8-inch OD water main running east-west on Kirk St. The sample consists of pipe crust scrapped from the Kirk Street water main. This photo shows the scar at the point the crust was removed. Photo facing SW. By Kollash. See exhibit B-5 for laboratory analyses. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line

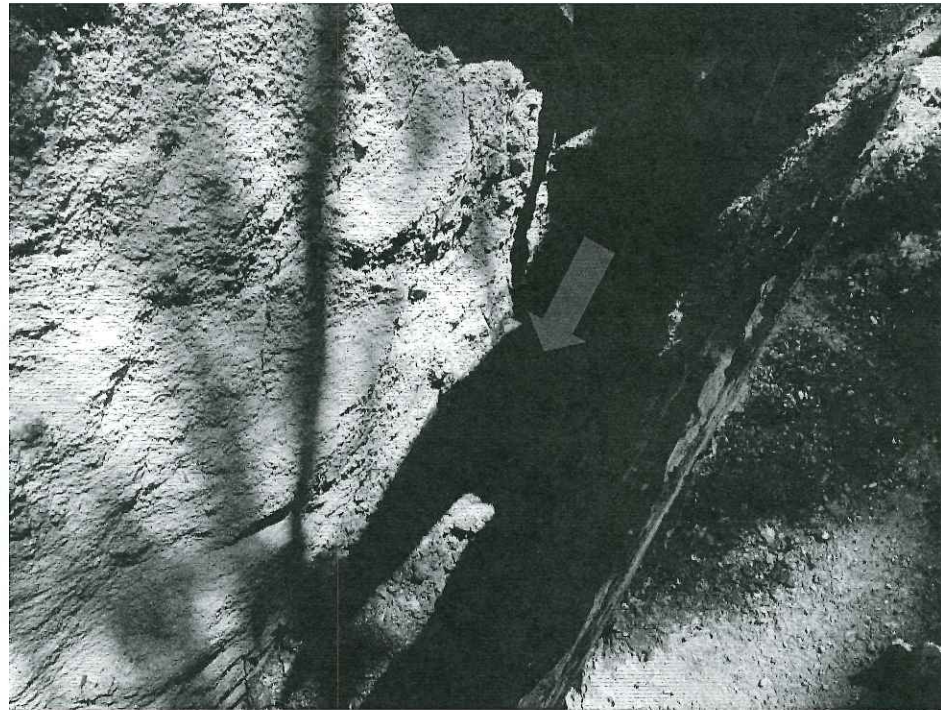


Photo 8: "Sample "74+65+16W/8"" was collected on 8/6/15 at 9:30 from a depth of 8 ft. The sample was associated with a 10-inch-diameter, N-S water main (now abandoned) running down the center of Dodge Ave. This sample consisted of soil collected from above the main. This photo shows the N-S main (in shadow) crossing the base of this E-W excavation for the Levy Center 8-in water lateral (see red arrow). Photo facing NE. By Kramer. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line

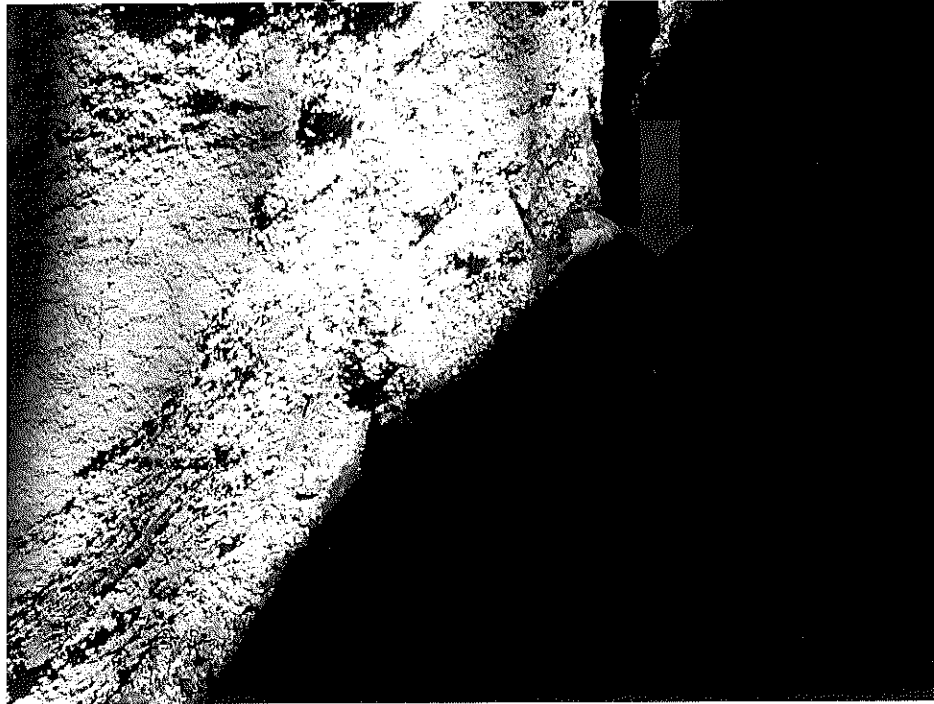


Photo 9: Sample, “Pipe Crust 74+65+16W/8” was collected on 8/6/15 at 9:30 from a depth of 8 ft. This sample was associated with the 10-inch-diameter water main (now abandoned) running down the center of Dodge Ave. This sample consisted of pipe crust scrapped from the top surface of the water main. This photo shows the N-S water main crossing the E-W excavation for the Levy Center water lateral (see red arrow). Photo facing NE. By Kramer. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line

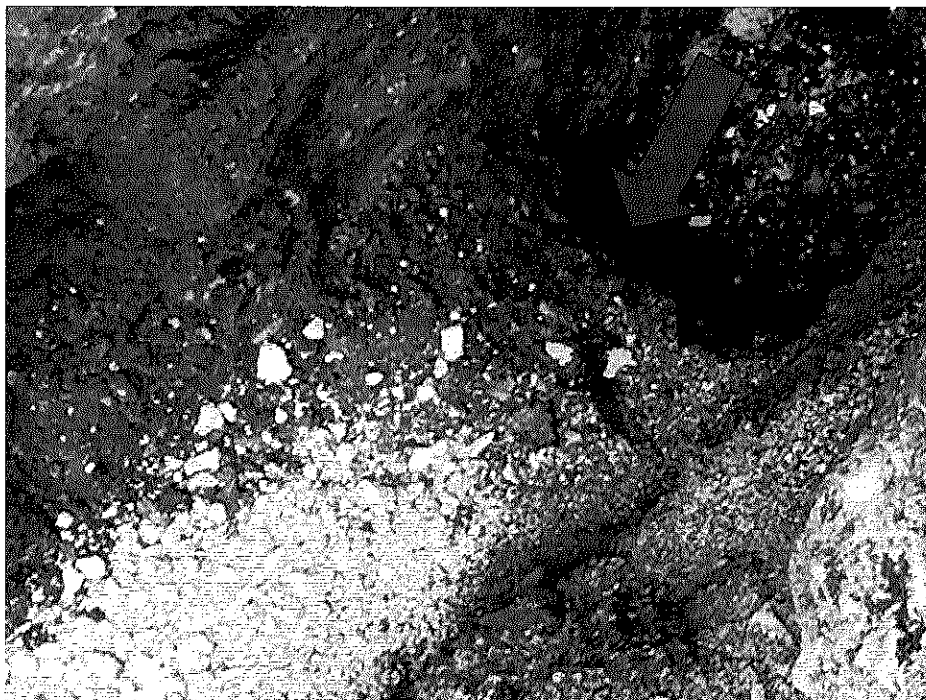


Photo 10: Sample “78+95+24W/6” was collected on 8/12/15 at 11:25 at a depth of 6 ft in the E-W trench for the 2-in water supply lateral for the Dawes School. Sample was associated with a 10-inch diameter, N-S water main (now abandoned) running down the center of Dodge Avenue. Sample consisted of dark-colored soil collected adjacent to the main. Photo facing SW. By Kramer. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line

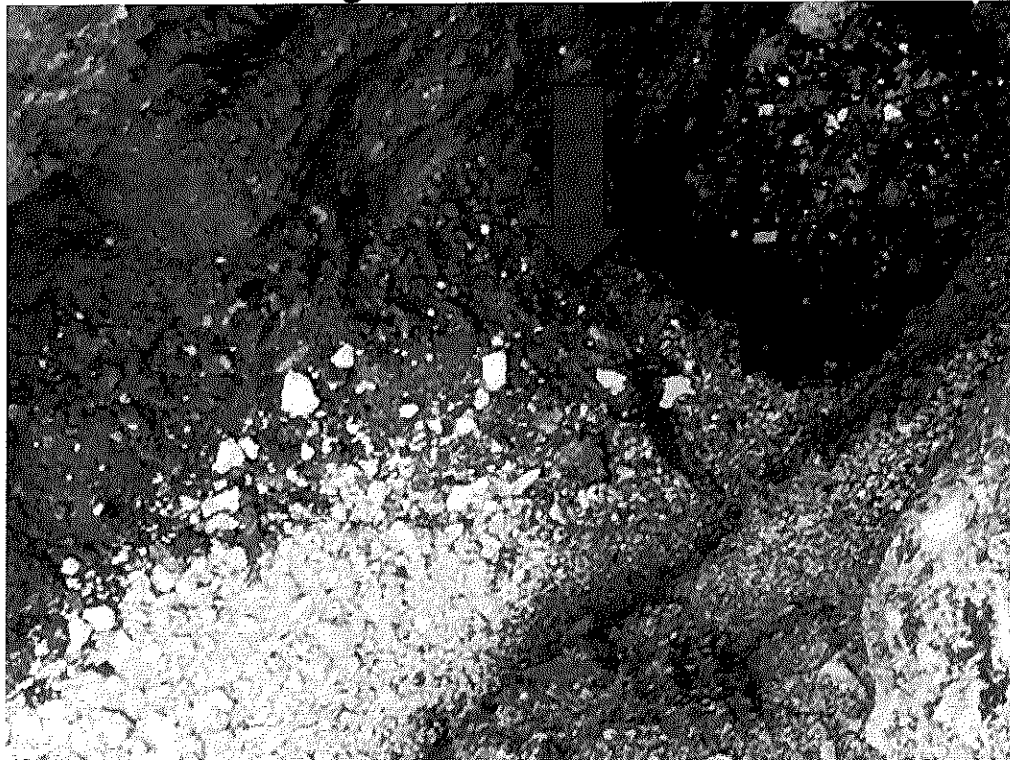


Photo 11: Sample “Exterior pipe crust 78+95+24W/6” was collected on 8/12/15 at 11:25 in the E-W trench for the 2-in water supply lateral for the Dawes School. Sample was associated with the 10-inch-diameter, N-S water main running down the center of Dodge Ave (now abandoned). Sample consisted of black silty sand to gray clayey silt crust scrapped from the water main (see red arrow). Hydrocarbon odor noted. Photo shows 10-inch-diameter main in the upper-right corner (see red arrow). Photo facing SW. By Kramer. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 12: Photo “78+10/7” was collected on 8/18/15 at 9:55 from a depth of 7 ft. Sample is associated with an 8-inch OD, E-W water main on Kirk Street near intersection with Dodge. Sample consists of dark gray soil from adjacent to the main (see red arrow). Photo shows pooled water (left side), 2-in street-light conduit (pink pipe along bottom), and 8-in main (black pipe on right side). Photo facing west. By Kramer. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 13: Sample "Exterior Pipe Crust 78+10/7" was collected on 8/19/15 at 10:05 from a depth of 7 ft. Sample is associated with an 8-inch-diam, E-W water main on Kirk Street near intersection with Dodge. Sample consists of crust scraped from the pipe (see red arrow). Photo shows A Lamp workman exposing the pipe. Photo facing east. By Kramer. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 14: Sample “Exterior Pipe Crust A 78+10/7” was collected on 8/19/15 at 11:20 from a depth of 7 ft. Sample is associated with an 8-inch-diam, E-W water main on Kirk Street near intersection with Dodge. Sample consists of dark, clayey crust scraped from the exterior of the main (see red arrow). Photo facing SSE. By Kramer. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 15: Sample “Valve Crust 78+10/7” was collected on 8/19/15 at 11:35 from a depth of 7 ft. Sample is associated with a valve for the 8-inch E-W Water Main on Kirk near Dodge. Sample consists of crust scrapped from sleeve portion of valve (see red arrow). Photo shows the valve and associated pipe segment before they were cut apart for handling and storage. Photo facing south. By Kramer. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 16: Sample "Top Flange Crust 78+10/7" was collected on 8/19/15 at 13:10 at a depth of 7 ft. Sample is associated with the valve for 8-inch E-W Water Main on Kirk near Dodge. Sample consisted of crust scrapped from the top portion of the valve above the flange (see red arrow). Photo shows valve after it was cut from the pipe to the left. Top of valve in upper half of photo. Photo facing south. By Kramer. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 17: Sample "Bottom Flange Crust 78+10/7" was collected on 8/19/15 at 13:10 from a depth of 7 ft. The sample is associated with a valve for the 8-inch E-W water main on Kirk near Dodge. Sample consists of crust scrapped from below the flange with a chisel (see red arrow). Photo shows valve after it was cut from the pipe to the right. Top of valve in upper half of photo. Photo facing south. By Kramer. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 18: Sample, "Exterior Pipe Crust 71+50/7" was collected on 8/20/15 at 9:30 from a depth of 7 ft. Sample is associated with a 10-inch diam, N-S, water main down center of Dodge (now abandoned). Sample consists of crust scrapped from the main (see red arrow). Photo shows encrusted pipe laying in angled trench at Mulford and Dodge. Photo facing south. By Kramer. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 19: Sample “71+50/7” was collected on 8/20/15 at 10:00 from a depth of 7 ft. Sample is associated with a 10-inch diam, N-S, water main down center of Dodge (now abandoned). Sample consists of gray silty-clay soil collected from above the main. Photo shows the main covered with soil in center of photo (running from top to bottom). Photo facing SSW. By Kramer. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 20: Sample “71+50/8” was collected on 8/20/15 at 10:45 from a depth of 8 ft. Sample is associated with the 10-inch diam, N-S, water main heading down center of Dodge (now abandoned). Sample consisted of gray silty-clay soil collected from below the main (see red arrow). Photo shows the main covered with soil in center of photo (running from top to bottom). Photo facing SSW. By Kramer. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 21: Sample, "Exterior Pipe Crust 71+50/7" was collected on 8/20/15 at 9:30 from a depth of 7 ft. Sample is associated with a 10-inch diam, N-S, water main down center of Dodge (now abandoned). Sample consists of crust scrapped from the main (see red arrow). Photo shows encrusted pipe lying in angled trench at Mulford and Dodge. Photo facing south. By Kramer. See exhibit B-5 for laboratory analyses.

Exhibit B-2: Photographs of the Soil and Crustaceous Material on the Outside of the Dodge Avenue Water Line



Photo 22: Sample “Exterior Pipe Crust A 71+50/7” was collected on 8/20/15 at 12:40 from a depth of 7 ft. Sample is associated with a pipe joint on the 10-inch-diam, N-S water main down center of Dodge (now abandoned). Sample consisted of a crust sample scrapped from the male portion of a pipe joint. Photo shows a black crust right of the connecting flange and rubber gasket (red arrow). The black section of the pipe is the part that extended inside the adjoining pipe. Photo facing south. By Kramer. See exhibit B-5 for laboratory analyses.

ATTACHMENT B-4

EXHIBIT B-4: PHOTOGRAPHS OF CRUSTACEOUS MATERIAL ON THE INSIDE OF THE DODGE AVE WATER LINE

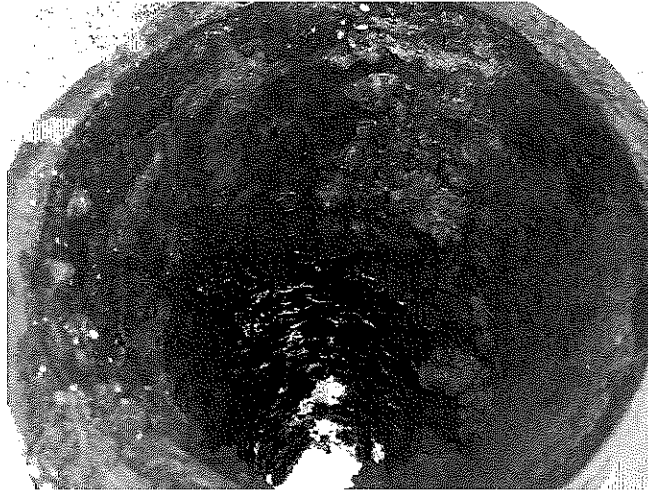


Photo 1: Sample "Interior Pipe Crust 78+10/7" was collected on 8/19/15 at 10:50 from a depth of 7 ft. Sample is associated with an 6-inch, inner diam, E-W water main on Kirk Street near intersection with Dodge. Sample consists of crust scraped from the inside of the water main a section was removed from excavation. Photo shows the crust inside the main. By Kramer. See exhibit B-5 for laboratory analyses.

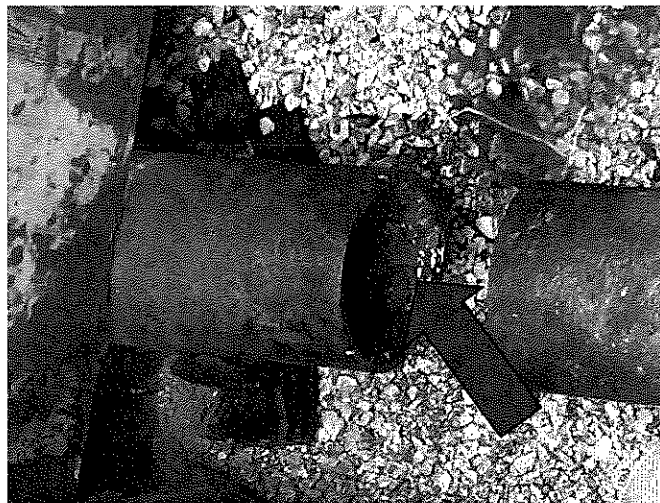


Photo 2: Sample "Interior Pipe Crust 71+50/7" was collected on 8/20/15 at 12:15 from a depth of 7 ft. Sample was associated with a 10-inch inner diam, N-S, water main down center of Dodge (now abandoned). Sample consisted of pipe crust scrapped from the interior of pipe stub protruding from the south wall of the Dodge and Mulford angled excavation. Photo shows cut pipe with red crust inside. Photo facing WSW. By Kramer. See exhibit B-5 for laboratory analyses.

ATTACHMENT B-5A

SUMMARY OF LABORATORY (SVOCs) ANALYSIS OF SOIL AND CRUSTACEOUS MATERIAL FROM OUTSIDE OF THE UNIDENTIFIED 24-IN PIPE

		1-Methylnaphthalene	2-Methylnaphthalene	3 & 4-Methylphenol	Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	benz[2-ethylhexyl] phthalate	Carbazole	Chrysene	Dibenz[a,h]anthracene	Dibenzofuran	Di-n-butyl phthalate	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene
Exterior Pipe Crust 78+95+4E/4'	Crust	15,000	2,800	<3300	11,000	48,000	32,000	34,000	26,000	31,000	9,000	12,000	<3600	<5100	37,000	<380	<2300	<3000	65,000	<280	10,000	6,800	14,000	81,000
78+95+4E/4'	Soil	<48	<36	<330	<35	190	<33	200	210	280	270	<57	<360	<500	220	<38	<230	<300	370	<27	180.1	210	230	300
Pipe Crust 74+65+5E/4.5	Crust	30 J	18 J	<59	<6.4	91	51	140	150	170	55	89	<65	<92	160	<6.9	<42	<54	150	<5.0	<9.2	68	99	270
74+65+5E/6.5	Soil	<10	<7.8	<71	<7.6	2,100	<7.1	1,400	2,800	3,300	670	800	<78	<110	1,900	210	<50	<65	<7.9	<6.0	1,100	<6.5	<5.9	3,300
Pipe Crust-West Pipe @ 81+87'	Crust	33 J	24 J	<66	130	81 J	140	77	77	97	50	36 J	<73	<100	81	<7.7	76 J	<61	350	240	45	60	330	310

Notes:

- 1) All data in ug/l.
- 2) J = concentration is estimated (below the method reporting limit but above the method detection limit).

SUMMARY OF LABORATORY (VOCs) ANALYSIS OF SOIL AND CRUSTACEOUS MATERIAL FROM OUTSIDE OF THE UNIDENTIFIED 24-IN PIPE

Analyte				1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Benzene	Ethylbenzene	Isopropylbenzene	Naphthalene	n-Butylbenzene	N-Propylbenzene	p-Isopropyltoluene	Styrene	Toluene	Xylenes, Total
500-99838-8	Exterior Pipe Crust 78+95+4E/4'	Crust	8/12/15	<15	<14	<5.1	<8.7	<17	<34	<8.9	<12	<13	<6.8	<7.9	<4.7
500-99838-7	78+95+4E/4'	Soil	8/12/15	<1.3	<1.5	<1.1	<1.3	<1.4	<2.3	<1.7	<1.5	<1.6	<1.2	<1.8	<1.9
500-99606-4	Pipe Crust 74+65+5E/4.5	Crust	8/6/15	<13	<12	<4.5	<7.6	<15	<30	<7.8	<11	<11	<6.0	<7.0	<4.1
500-99606-5	74+65+5E/6.5	Soil	8/6/15	170	<17	570	220	<21	380	<11	<15	<15	<8.3	930	720
500-99305-2	Pipe Crust-West Pipe @ 81+87'	Crust	7/31/15	38 J	<15	<5.3	90	35 J	58 J	<9.2	<12	<13	650	20	62

Notes:

- 1) All data in ug/l.
- 2) J = concentration is estimated (below the method reporting limit but above the method detection limit).

ATTACHMENT B-5B

Summary of Laboratory Analysis of Soil and Crustaceous Material on Outside of Dodge Ave Water Line

Sample Number	Matrix	1,2,4- Trimethylbenzene	1,3,5- Trimethylbenzene	Benzene	Ethylbenzene	Isopropylbenzene	Naphthalene	n- Butylbenzene	N- Propylbenzene	p- Isopropyltoluene
84+45-6.5'	soil	<4.5	<4.5	30	<4.5	<4.5	32 J	<4.5	<4.5	<4.5
Pipe Crust 84+26	crust	<120	<120	<15	<15	<120	<120	<58	<120	<120
Pipe Crust 84+45	crust	<150	<150	58	<19	<150	<150	<76	<150	<150
Soil @ 81+87' Above Water Main	soil	<1.3	<1.5	<1.1	<1.3	<1.4	<2.2	<1.7	<1.5	<1.5
Soil @ 81+87' Below Water Main	soil	<1.4	<1.5	<1.2	<1.3	<1.4	<2.3	<1.7	<1.5	<1.6
78+8	soil	<1.5	<1.6	<1.3	<1.4	<1.6	<2.5	<1.9	<1.7	<1.7
78+8 Pipe Crust	crust	<13	<12	<4.4	<7.5	<15	<29	<7.7	<10	<11
74+65+16W/8'	soil	<16	<16	180	160	250	<38	<9.8	<13	<14
Pipe Crust 74+65+16W/8'	crust	<16	<16	78	230	250	<38	<9.8	<13	94 J
78+95+24W/6'	soil	<1.4	<1.5	<1.2	7	<1.5	<2.4	<1.8	<1.6	<1.6
Exterior Pipe Crust 78+95+24W/6'	crust	<12	<12	<4.2	<7.2	<14	<28	<7.4	<10	<11
78+10/7'	soil	<1.0	<1.1	<0.89	<0.99	<1.1	<1.8	<1.3	<1.2	<1.2
Exterior Pipe Crust 78+10/7'	crust	<14	<13	30	<8.2	<16	<32	<8.4	<11	<12
Exterior Pipe Crust A 78+10/7'	crust	<0.82	<0.91	<0.71	<0.79	<0.86	4	<1.0	<0.92	<0.97
Valve Crust 78+10/7'	crust	<1.7	<1.9	<1.5	<1.7	<1.8	<2.9	<2.2	<1.9	<2.0
Top Flange Crust 78+10/7'	crust	<1.6	<1.7	<1.4	<1.5	<1.7	<2.7	<2.0	<1.8	<1.9
Bottom Flange Crust 78+10/7'	crust	<1.4	<1.5	<1.2	<1.3	<1.5	<2.4	<1.8	<1.6	<1.6
Exterior Pipe Crust 71+50/7'	crust	<1.2	<1.3	<0.99	<1.1	<1.2	<2.0	<1.5	<1.3	<1.4
71+50/7'	soil	<1.4	<1.5	<1.2	<1.3	<1.5	<2.4	<1.8	<1.6	<1.6
71+50/8'	soil	160	<13	290	470	100 J	170	<8.2	<11	<12
Exterior Pipe Crust A 71+50/7'	crust	<1.5	<1.7	<1.3	59	<1.6	6	<2.0	<1.7	<1.8

Summary of Laboratory Analysis of Soil and Crustaceous Material on Outside of Dodge Ave Water Line

Sample Number	Matrix	Styrene	Toluene	Xylenes, Total	1- Methylnaphthalene	2- Methylnaphthalene	3 & 4 Methylphenol	Acenaphthene	Acenaphthylene
84+45-6.5'	soil	<4.5	<4.5	<9.0	26 J	25 J	<200	13 J	79
Pipe Crust 84+26	crust	<58	<15	<29	<35	<35	<180	<35	<35
Pipe Crust 84+45	crust	<76	21	27 J	43	38 J	<210	19 J	52
Soil @ 81+87' Above Water Main	soil	<1.2	<1.8	<1.9	130	120	<70	91	160
Soil @ 81+87' Below Water Main	soil	<1.2	<1.8	<2.0	78	70	<70	130	160
78+8	soil	<1.3	<2.0	<2.1	<10	<7.7	<70	<7.5	21 J
78+8 Pipe Crust	crust	<5.9	<6.9	84	<84	87 J	<570	<61	190 J
74+65+16W/8'	soil	<7.5	19	71	<10	82	<68	100	490
Pipe Crust 74+65+16W/8'	crust	<7.5	<8.7	<5.2	2,300	890	<69	520	660
78+95+24W/6'	soil	2.9 J	<1.9	<2.0	790	320	<320	190	1,500
Exterior Pipe Crust 78+95+24W/6'	crust	<5.6	<6.6	<3.9	<43	<33	<300	<32	<23
78+10/7'	soil	<0.93	<1.4	<1.5	110 J	110 J	<330	120 J	420
Exterior Pipe Crust 78+10/7'	crust	<6.4	15 J	<4.5	<46	44 J	<310	69 J	170 J
Exterior Pipe Crust A 78+10/7'	crust	<0.74	<1.1	<1.2	250 J	190 J	<650	400	910
Valve Crust 78+10/7'	crust	<1.6	<2.3	<2.5	<47	<35	<320	<34	<25
Top Flange Crust 78+10/7'	crust	<1.4	<2.1	<2.3	<96	<72	<650	<70	<52
Bottom Flange Crust 78+10/7'	crust	<1.3	<1.9	<2.0	<110	300 J	<780	<84	<62
Exterior Pipe Crust 71+50/7'	crust	<1.0	<1.6	<1.7	600	470	<580	150 J	1,800
71+50/7'	soil	<1.3	<1.9	<2.0	<10	<7.9	<71	<7.7	<5.6
71+50/8'	soil	68	49	430	650	<37	<330	<36	50 J
Exterior Pipe Crust A 71+50/7'	crust	<1.4	<2.1	79	910	1,200	820 J	880	12,000

Summary of Laboratory Analysis of Soil and Crustaceous Material on Outside of Dodge Ave Water Line

Sample Number	Matrix	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Bis(2-ethylhexyl) phthalate
84+45-6.5'	soil	150	200	190	190	93	64	<200
Pipe Crust 84+26	crust	74	300	250	310	220	130	<180
Pipe Crust 84+45	crust	53	160	140	200	110	82	<210
Soil @ 81+87' Above Water Main	soil	190	560	460	610	280	260	<76
Soil @ 81+87' Below Water Main	soil	110	330	290	380	180	160	<77
78+8	soil	<7.0	19 J	28 J	30 J	<14	30 J	<77
78+8 Pipe Crust	crust	360	2,000	2,000	2,400	350	1,200	<630
74+65+16W/8'	soil	280	550	480	570	150	260	<75
Pipe Crust 74+65+16W/8'	crust	1,900	3,900	2,300	3,500	610	1,100	<76
78+95+24W/6'	soil	620	1,600	1,500	1,600	760	970	<350
Exterior Pipe Crust 78+95+24W/6'	crust	<30	<24	<34	<38	<57	<52	<320
78+10/7'	soil	2,000	5,200	4,500	6,000	1,100	2,700	<360
Exterior Pipe Crust 78+10/7'	crust	790	2,600	2,600	3,100	600	1,600	<340
Exterior Pipe Crust A 78+10/7'	crust	5,500	8,700	7,400	9,900	1,800	4,700	<710
Valve Crust 78+10/7'	crust	<32	26 J	<37	<41	<62	<57	<350
Top Flange Crust 78+10/7'	crust	330 J	600	910	1,100	850	190 J	740 J
Bottom Flange Crust 78+10/7'	crust	510	1,300	1,600	2,000	1,800	760	<850
Exterior Pipe Crust 71+50/7'	crust	6,700	12,000	10,000	14,000	3,100	5,200	<640
71+50/7'	soil	<7.1	<5.8	<8.3	<9.2	<14	<13	<78
71+50/8'	soil	<33	93 J	<39	100 J	<64	<59	<370
Exterior Pipe Crust A 71+50/7'	crust	190,000	390,000	350,000	430,000	140,000	150,000	<820

Summary of Laboratory Analysis of Soil and Crustaceous Material on Outside of Dodge Ave Water Line

Sample Number	Matrix	Carbazole	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Di-n-butyl phthalate	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene
84+45-6.5'	soil	<200	230	35 J	<200	<200	500	59	80
Pipe Crust 84+26	crust	<180	260	73	<180	<180	570	<35	180
Pipe Crust 84+45	crust	<210	200	33 J	<210	170 J	300	37 J	82
Soil @ 81+87' Above Water Main	soil	<110	600	120	<49	<64	630	160	220
Soil @ 81+87' Below Water Main	soil	<110	380	73	<49	<64	390	150	150
78+8	soil	<110	31 J	<8.1	<49	<64	24 J	<5.9	<11
78+8 Pipe Crust	crust	<880	1,800	190 J	<400	<520	2,800	190 J	530
74+65+16W/8'	soil	<110	640	<7.9	<48	<62	800	220	170
Pipe Crust 74+65+16W/8'	crust	400	3,400	180	240	<63	7,800	1,300	610
78+95+24W/6'	soil	<500	1,900	280	<230	<290	2,300	850	680
Exterior Pipe Crust 78+95+24W/6'	crust	<460	<48	<34	<210	<270	<33	<25	<46
78+10/7'	soil	1,700	4,700	380	400 J	<300	9,700	970	1,500
Exterior Pipe Crust 78+10/7'	crust	620 J	2,300	230	<220	<290	4,100	470	880
Exterior Pipe Crust A 78+10/7'	crust	3,700	8,000	680	1600 J	<600	20,000	3,500	2,300
Valve Crust 78+10/7'	crust	<480	<52	<37	<220	<290	54 J	<27	<50
Top Flange Crust 78+10/7'	crust	<980	1,000	<76	<460	<600	1,100	<55	<100
Bottom Flange Crust 78+10/7'	crust	<1200	1,400	<90	<550	<710	2,100	<66	1,400
Exterior Pipe Crust 71+50/7'	crust	3,000	11,000	490	550 J	<530	42,000	1,600	3,800
71+50/7'	soil	<110	<12	<8.3	<50	<65	9.3 J	<6.0	<11
71+50/8'	soil	<500	100 J	<39	<230	<300	74 J	41 J	<52
Exterior Pipe Crust A 71+50/7'	crust	9,000	370,000	14000 J	3,900	<690	870,000	10,000	160,000

Summary of Laboratory Analysis of Soil and Crustaceous Material on Outside of Dodge Ave Water Line

Sample Number	Matrix	Naphthalene	Phenanthrene	Pyrene
84+45-6.5'	soil	<4.5	300	600
Pipe Crust 84+26	crust	<35	170	670
Pipe Crust 84+45	crust	35 J	170	490
Soil @ 81+87' Above Water Main	soil	140	320	1,900
Soil @ 81+87' Below Water Main	soil	82	190	1,000
78+8	soil	<6.5	18 J	34 J
78+8 Pipe Crust	crust	120 J	1,400	3,100
74+65+16W/8'	soil	160	510	1,200
Pipe Crust 74+65+16W/8'	crust	1,400	12,000	13,000
78+95+24W/6'	soil	650	1,600	3,400
Exterior Pipe Crust 78+95+24W/6'	crust	<27	<25	64 J
78+10/7'	soil	220	6,700	7,900
Exterior Pipe Crust 78+10/7'	crust	87 J	2,900	3,400
Exterior Pipe Crust A 78+10/7'	crust	290 J	18,000	16,000
Valve Crust 78+10/7'	crust	<30	55 J	62 J
Top Flange Crust 78+10/7'	crust	<60	800	1,300
Bottom Flange Crust 78+10/7'	crust	450 J	1,300	2,900
Exterior Pipe Crust 71+50/7'	crust	870	20,000	39,000
71+50/7'	soil	<6.6	12 J	9.9 J
71+50/8'	soil	<31	88 J	130 J
Exterior Pipe Crust A 71+50/7'	crust	4,200	560,000	740,000

ATTACHMENT B-5C

Summary of Laboratory Analysis of Internal Crust Data for Water Mains on Dodge Ave

Analyte		Ethylbenzene	Xylenes, Total	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Carbazole	Chrysene	Dibenz[a,h]anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene
Interior Pipe Crust 78+10/7'	Kirk Street 6" ID	<1.5	<2.2	170 J	200 J	100 J	180 J	1,500	3,300	2,900	4,000	780	1,900	1,200	3,100	280	480 J	7,100	830	1,000	500	6,000	5,400
Interior Pipe Crust 71+50/7'	Mulford and Dodge 12" ID	170	180	<110	<83	<82	<60	300 J	680	430 J	520	<150	230 J	<1100	900	<88	<530	1,200	72 J	<120	<70	1,700	1,800

Exhibit B-5C

Data in ug/l

ATTACHMENT B-6

**Exhibit B-6: Table 2 from SCS Report, Revised to Reflect 2015 Work
Coal Tar Compounds of Concern**

Compound	NYSDEC ¹	USEPA ²	Skokie MGP ³	Black Crust On Water Main	Crust Inside Water Main	Black Crust on Unidentified 24-in pipe ⁴	Soil near Unidentified 24-in pipe ⁵
1-Methylnaphthalene	--	--	Not Tested	Yes	Yes*	Yes	No
2-Methylnaphthalene	Yes	Yes	Not Tested	Yes	Yes*	Yes	No
Acenaphthene	Yes	Yes	Yes	Yes	Yes*	Yes	No
Acenaphthylene	Yes	Yes	Yes	Yes	Yes*	Yes	Yes
Anthracene	Yes	Yes	Yes	Yes	Yes	Yes	No
Benzene	Yes	Yes	Yes	Yes	No	No	Yes
benzo(a)anthracene	Yes	Yes	Yes	Yes	Yes	Yes	Yes
benzo(a)pyrene	Yes	Yes	Yes	Yes	Yes	Yes	Yes
benzo(b)fluoranthene	Yes	Yes	Yes	Yes	Yes	Yes	Yes
benzo(g,h,i)perylene	Yes	Yes	Yes	Yes	Yes	Yes	Yes
benzo(k)fluoranthene	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Chrysene	Yes	Yes	Yes	Yes	Yes	Yes	Yes
dibenzo(a,h)anthracene	Yes	Yes	Yes	Yes	Yes	No	Yes
Ethylbenzene	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fluoranthene	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fluorine	Yes	Yes	Yes	Yes	Yes	Yes	No
indeno(1,2,3-cd) pyrene	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Isopropylbenzene			Not Tested	Yes	No	Yes*	No

¹ See New York State Department of Environmental Conservation Paper, "Contamination at MGP Sites," found at <http://www.dec.ny.gov/chemical/24922.html>.

² Multi-Site Risk Assessment Framework Former Manufactured Gas Plant Sites, Prepared for Wisconsin Public Service Corporation, Peoples Gas Light and Coke Company, and North Shore Gas Company, by Exponent, dated September 5, 2007, Table 1, "MGP-related contaminants of potential concern, former MGP sites, EPA Region," found at <http://www.epa.gov/region05/cleanup/mgp.htm>.

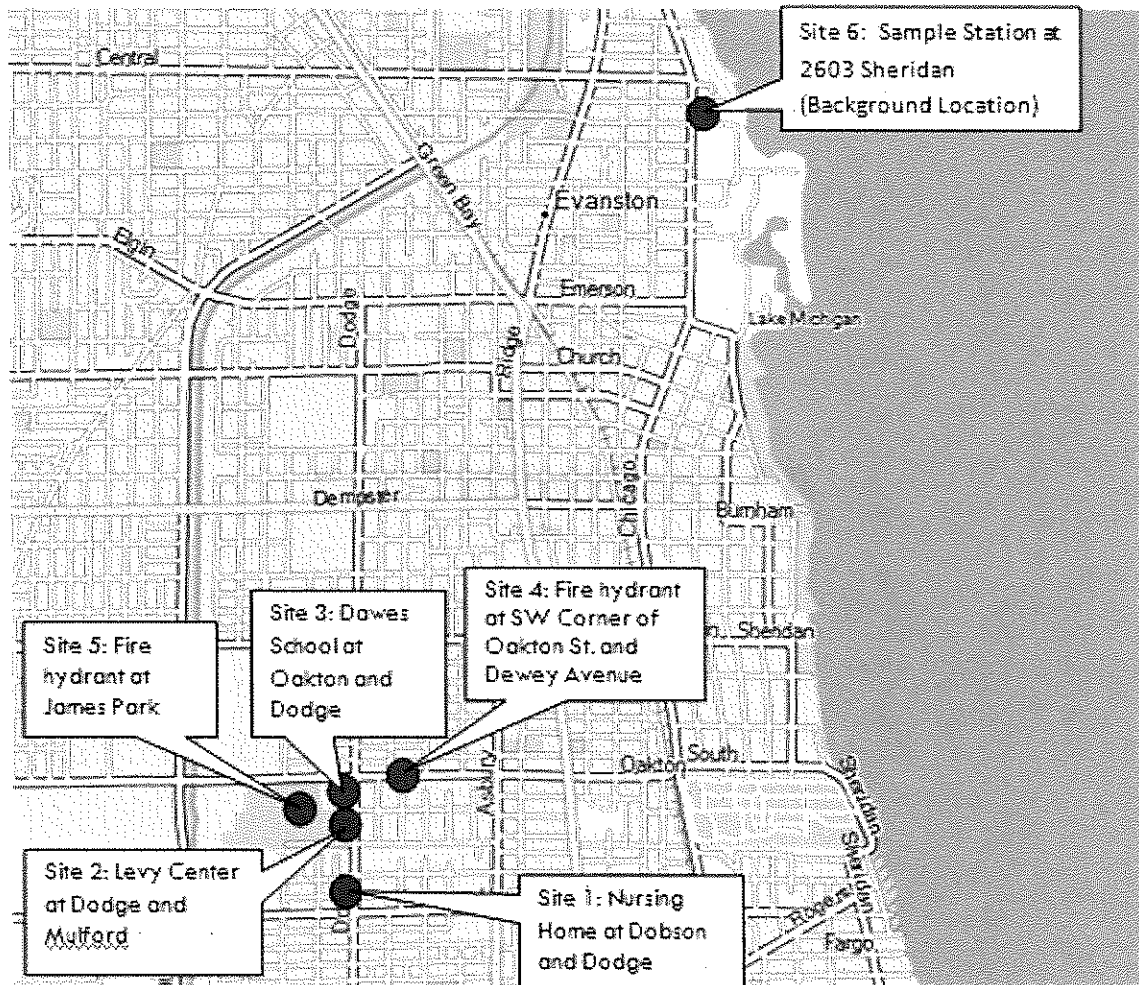
³ Skokie MGP Site Investigation Report prepared by Burns & McDonnell on behalf of Nicor dated November 2008, Table 17, Source Material Evaluation, Page 115 of 129, SKO-SP170-001, sample taken at 0-0.9 ft. below ground surface.

⁴ The detections in this column are based upon a composite of three crust samples from the 24-in unknown pipe.

⁵ The detections in the column titled, "Soil near 24-in Unknown Pipe," is based upon a composite of two soil samples.

ATTACHMENT B-7

**EXHIBIT B-7 Figure Identifying Locations Where Samples Were
Collected From the City's Water Distribution System**



ATTACHMENT B-8

Exhibit B-8: Analytical Testing of Samples Collected from the City's Water Distribution System
Selected Coal Tar Constituents
(Results are in µg/L)

Sample Identification	Sampling Date	Toluene	Xylenes (total)	Fluoranthene	Naphthalene	Phenanthrene
Site 1 E	9/4/2015	ND	ND	ND	ND	ND
Site 1 L	9/4/2015	ND	ND	ND	ND	ND
Site 2 E	9/4/2015	ND	ND	ND	ND	ND
Site 2 L	9/4/2015	ND	ND	ND	ND	ND
Site 3 E	9/4/2015	ND	ND	ND	ND	ND
Site 3 L	9/4/2015	ND	ND	ND	ND	ND
Site 4 E	9/4/2015	ND	ND	ND	ND	ND
Site 4 L	9/4/2015	ND	ND	ND	ND	ND
Site 5 E	9/4/2015	ND	ND	ND	ND	ND
Site 5 L	9/4/2015	ND	ND	ND	ND	ND
Site 6 E	9/4/2015	ND	ND	ND	ND	ND
Site 6 L	9/4/2015	ND	ND	ND	ND	ND
Illinois Drinking Water Reporting Limit ^[1]		0.5	0.5	NE	NE	NE
Maximum Contaminant Level ^[2]		1,000	10,000	NE	NE	NE

Site Key

- 1 Nursing Home at 120 Dobson Street, visitors restroom faucet.
- 2 Levy Senior Center at 30 Dodge Avenue, kitchen faucet.
- 3 Dawes School at 440 Dodge Avenue, janitor closet.
- 4 Fire hydrant at Southwest Corner of Oakton St. and Dewey Avenue.
- 5 Fire hydrant near park shelter at James Park.
- 6 Sample Station at 2603 Sheridan (background location).
- E Early Sample collected after less than 30 seconds of purge.
- L Late Sample collected after approximately 10 minute purge.

Notes

- µg/L Micrograms per liter or parts per billion (ppb).
- ND Not detected at or above the IEPA Drinking Water Reporting Limit, where applicable, or the laboratory reporting limit.
- NE Not established.
- [1] Illinois EPA Acceptable Drinking Water Reporting Limits (dated 8/4/15).
- [2] U.S. EPA National Primary Drinking Water Standards (<http://water.epa.gov/drink/contaminants/index.cfm#Primary>).

